

## REMARKS

Claims 1-86 are currently pending in the application. Claim 39 has been amended. Claims 83-86 have been added. No new matter has been added.

The Office has maintained its restriction requirement and states the claim 80 is directed to a non-elected species. The Applicant reasserts its traversal of this rejection, but has withdrawn claim 80 to expedite prosecution.

The Office rejects claim 47 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Applicant respectfully disagrees and traverses this rejection.

Specifically, the Office states that the claim language, “initiator region being displaced nearer the center of the flex panel than either longitudinal end”, has not been adequately disclosed, and further states that the language in the specification, “the initiator portion may be located substantially towards a center of said flexure panel”, fails to support the claim language. The Applicant asserts that this language is supported in the specification, and indeed, can be contained in the specification, claims or drawings as originally filed. See MPEP 2163.06.

In this regard, the Applicant directs the Office’s attention to Figure 8a. Figure 8a clearly illustrates an “initiator region being displaced nearer the center of the flex panel than either longitudinal end”. It is irrelevant that the exact embodiment found in Figure 8a is a non-elected species. The disclosure of an “initiator region being displaced nearer the center of the flex panel than either longitudinal end” is evident from the Figure.

Further, the Applicant respectfully disagrees that the language in the specification fails to support this claim language. Although the language is not identical, the specification identifies, for one embodiment, a location for the initiator portion, namely, “substantially towards a center of said flexure panel”. Referring to any of the figures, it is clear that if the initiator portion is located “towards a center of said flexure panel”, the initiator portion is “nearer the center of the flex panel than either longitudinal end”. Further support is found on page 17, line 10, which states that “the initiator portion 800 extends ... from a central initiator end 900.” The Applicant contends that the Office’s reading of the specification and figures are inappropriate.

The Office rejects claims 27-39, 41, 42, 47, 48, 51, 52, 65-68 and 77-82 pursuant to 35 U.S.C. §102(e) as being anticipated by Krishnakumar. The Applicant disagrees and traverses this rejection.

Independent claims 27, 37 and 77 each require a flex panel “having a flexure region ... and a flexure initiator region”. The claims further state that the initiator region “causes ... said flexure region to progressively flex.” The Applicant contends that the Krishnakumar reference does not teach or suggest an initiator region, and further, fails to teach or suggest an initiator region that causes the flexure region to flex. Indeed, the Office has failed to identify *any* language in the specification that teaches a flex panel having an initiator region.

By its rejection, the Office is contending that Krishnakumar teaches all of the elements of each of these claims. In particular, the Office states that “[t]he area around the edge is the initiator and the center is the flexure.” The Office fails, however, to identify any language in the specification supporting the conclusion that the edge is the initiator. For at least this reason, Krishnakumar fails to teach these claims, as it fails to teach each and every element of the claims.

Assuming, *arguendo*, that the Office is correct, and that the initiator is “the area around the edge” of the panel, the Applicant contends that the Krishnakumar reference still fails to teach the claimed invention, as it fails to teach each and every limitation in these claims. In particular, Krishnakumar fails to teach the initiator region “causes ... said flexure region to progressively flex” as required in claims 27 and 77, or “to reverse” as required in claim 37.

Krishnakumar, column 4, lines 10-26 states that the vacuum panel includes “a radially-recessed shoulder portion 54, forming a continuous boundary with the panel section 18.” As the “product begins to cool and generates a negative pressure inside the bottle”, the convex central wall portion (56) moves radially inward, and adopts a first concave position 56’. Col. 4, lines 14-18. Additionally, to further alleviate negative pressure, “the entire vacuum panel 20, 22 and portions 58 of the panel wall 19 adjacent the vacuum panels, move radially inwardly (56”, 58”).” Col. 4, lines 19-22 (emphasis added).

As seen from the specification, Krishnakumar clearly states that the entire panel moves AT THE SAME TIME. The language in Krishnakumar does NOT state, teach or suggest that the edge portion CAUSES the flexure region of the flex panel to flex. There is no suggestion or teaching that the edge causes or initiates the radial movement of the wall portion 56. Rather, Krishnakumar teaches that the entire panel which must include the edges (see claim 27 “said flex panel having a flexure region ... and a flexure initiator region”), and adjacent structure, moves simultaneously. Thus, the Office’s assertion contradicts and is unsupported by the specification. As such, it is inappropriate for the Office to read this limitation into the specification of Krishnakumar as the very language of the reference contradicts this limitation, and thus, the conclusions of the Office are unsupportable and baseless. Indeed, the Office has failed to offer any specific support from the specification and has instead introduced its own conclusions on the operation of this bottle, wherein such conclusions are most likely based on the explanation of the operation of the Applicant’s invention.

Further, as stated above, the Office states that the “the area around the edge is the initiator and center is the flexure”. Since the center of the panel is the flexure, and the initiator is the area around the edge (assuming the Office’s position is correct), Krishnakumar further fails to teach the claim language. In particular, Krishnakumar fails to teach “a flexure region positioned towards a first longitudinal end of said flex panel and a flexure initiator region positioned towards an opposing end of said flex panel”.

The “center” of the panel is positioned at the center of the panel. If the flexure region is the “center” of the panel, the flexure region cannot be “positioned towards a first longitudinal end” as required by the claim language, as by definition it resides in the “center” of the panel.

Further, the “edges” are not positioned towards an opposing end of said flex panel. More specifically, the “edges” surround the panel, and thus, the “initiator region” is not positioned towards an opposing end; rather, the initiator region surrounds the panel.

It would be inappropriate to conclude that because a portion of the edge is at an opposing end, that the claim language is met. It is inappropriate because a *portion* of the initiator region is NOT the initiator region, it is simply a portion thereof. The claim

language requires the “initiator region”, that is, the “edges” in totality, to be “positioned towards an opposing end of said flex panel.” In this instance, by its nature, the “edges”, which surround the panel, cannot, in total, be at an opposing end of the panel, and parsing the “edges” into sections to meet the claim language suggests a strained reading of the reference to reach a result driven conclusion. For the reasons set forth above, these claims are allowable as each and every limitation in these claims is not met by Krishnakumar.

With respect to independent claims 47 and 65, the Applicant contends that Krishnakumar fails to teach each and every limitation in these claims. In particular, Krishnakumar fails to teach a flex panel having “a first and second flexure region”. Indeed, as identified by the Office, the flexure region is the “center” of the panel. No other flexure region is identified or can be found in Krishnakumar. Thus, this limitation is not met.

Further, claims 47 and 65 require that the “first flexure region extend[] towards a first end of said flex panel, and said second flexure region extend[] towards an opposing end of said flex panel.” This limitation is also not met as evinced from the argument above.

Finally, claims 47 and 65 require that the “initiator region be[] displaced nearer the centre of the flex panel than either longitudinal end”. By the Office’s own comments, the initiator region is the “edges” of the panel. As the edges of the panel are not “displaced nearer the centre of the flex panel”, but rather are around the panel, this limitation is not met by the reference. For the reasons set forth above, these claims are allowable.

With respect to claim 48, the claim requires “a longitudinally displaced flexure region ... extending away from said initiator region”. As discussed above, in accordance with the Office’s statements, the initiator region is the edges. A flexure region in the center of the panel cannot be longitudinally displaced “extending away from said initiator region”, namely, extending away from the edges. Indeed, a portion of the initiator region is in the longitudinal direction, and thus, although the flexure region may be extending away from a *portion* of the initiator region, it cannot be “extending away from said

initiator region”. The structure of the Krishnakumar bottle simply does not meet the claim language. As argued above, it is inappropriate to segment the initiator region into sections so as to meet the limitations of the claim language.

With respect to claim 68, claim 68 requires a flex panel having a flexure region and “a continuous flexure initiator region ... of transverse curvature longitudinally displaced from the flexure region”. The edge is simply a boundary between the panel and the supporting wall. There is no indication that the edge of the flex panel has a “transverse curvature” nor is it “longitudinally displaced from the flexure region”. Again, the edge surrounds the panel, and thus, cannot be, in its entirety, “longitudinally displaced from the flexure region”. As such, these claim limitations are not met and thus, this claim is allowable over Krishnakumar.

With respect to claims 81 and 82, the Office states that the “flexure region has a greater arc length than the initiator region”. The Applicant respectfully disagrees.

Despite its disagreement, the Applicant assumes that the Office is referring to the claim language in claim 82, namely, the “lower area having a greater amount of arc projecting away from said plane”. Assuming the Applicant’s assumption is correct, claim 81 must be allowable because the language in claim 81 requires the opposite condition, namely, the “lower area having a *lesser* amount of arc projecting away from said plane”. As the Office contends that the initiator is the edge, and the reference does not indicate any variation in the edge, the ‘arc length’ of the edge must be the same all along the edge, and thus, cannot be “a lesser amount” and a “greater amount” at the same time.

In light of the arguments set forth above, dependent claims 28-36, 38-39, 41, 42, 51, 52, 66-67 and 78-80, are allowable as they depend, directly or indirectly on the above referenced independent claims.

The Office further rejects claims 27-39, 41, 42, 47, 48, 51, 52, 65-68 and 77-82 pursuant to 35 U.S.C. §102(b) as being anticipated by Weckman. The Applicant disagrees and traverses this rejection.

The Office references Figures 5-9 as support that Weckman anticipates the above-referenced claims. In particular, the Office states that “the initiator region is located at

the top of the panel near lead line 92". The Office further states that the "flexure region is located towards the bottom of the panel", wherein the panel is "capable of inverting due to the hinges 92".

The Applicant respectfully contends that the Office is incorrect. Indeed, the Applicant contends that Weckman fails to meet the claim language as it fails to teach "a flex panel having a flexure region ...and a flexure initiator region", wherein the flexure initiator region "causes said flexure region to progressively flex" (claims 27, 77) or to "reverse" (claim 37) as required in the claims.

The Office claims that the "initiator region is located at the top of the panel near lead line 92". The Office however, fails to provide any specific language in the specification supporting this assertion. Indeed, this assertion is not supported, and in fact, is contradicted by the language in the specification. In explaining the manner in which this bottle operates, the specification states that "as the partial vacuum is formed on the interior of the container, the label panel areas collapse slowly inwardly of the container." Col. 6, lines 44-46. The specification simply states "the label panel areas collapse". It does not indicate any particular area collapses first or causes any other region to invert, or that "motion of said flexure initiator region ... is transferred to said flexure region" (claim 68). Weckman in fact teaches away from any region collapsing preferentially ahead of another region. Weckman specifically seeks to control collapse such that the whole panel area collapses *evenly* so as to prevent 'paneling' and to retain an even shape to the label adhered to the label panel area. See Col 6 lines 30 – 57. The Office has simply imposed an arbitrary interpretation on the reference. Indeed, a review of Figures 5-9 does not illustrate any causal movement or differing movement in any region of the label panel area. Any difference between the figures, for example, Figure 8 and Figure 9, is simply due to the construction of the bottle, namely, the "vertical portions of the label panels 84 and 86 are composed of a continuous series of straight lines which are angled inwardly from the bottom of the container toward the top". Col. 5, lines 36-39. This difference, however, does not support a conclusion that one portion of the panel causes another portion to collapse. This conclusion is simply asserted by the Office without support and, Applicant respectfully contends, is based on a misunderstanding of the reference.

As the label panel areas collapse, “the upstanding rim[s] (88, 90) ... force[] the stresses to be concentrated in the flexible hinge areas”. Col. 6, lines 46-49. In contradiction to the Office’s assertions, the hinge area 92 does not cause the label panel to invert, rather, the “concentration of the collapsing forces due to the inward movement of the label panel in the hinge area isolates such forces from the neck, bottom and sidewalls of the container.” Col. 6, lines 49-53. By isolating the forces, the integrity of these portions of the container remains protected. Col. 6, lines 53-57.

Further, the Applicant directs the Office to the language regarding the panel movement. The movement of the label panel area is *inward*. There is no indication that the label panel area inverts, and indeed, the reference teaches away from this interpretation. See col. 5, lines 66-end – col. 6, lines 1-2 (“the stresses induced by the *flattening* of the curved label panels 84 and 86 [are] absorbed by the hinge areas 92 and 94) (emphasis added).

This is a label panel, not “an invertible flexible panel” as required in claim 37. An inverting label panel is not desirable as the inversion would destroy the label. This concept is discussed throughout this reference and is the reason that the forces created by the collapsing panel are directed to the hinge areas. See for example, col. 6, lines 31-38. Clearly, the label panel areas are not “capable of inverting due to the hinges 92” as suggested by the Office or else the bottle would possess the same problems as those the reference intended to overcome.

The Office is attempting to overlay an interpretation of the Weckman reference that is simply not suggested or taught. The Office has not provided any specific support from the specification, and in this regard, the interpretation is based on unsupported conclusions and is improper. As the Weckman reference fails to teach or suggest “a flex panel having a flexure region ...and a flexure initiator region”, the Weckman reference fails to meet all of the claim limitations, and thus, fails to anticipate these claims. Further, by the Office’s placement of an initiator region and a flexure region, claims 47 and 65 are not met for the reasons argued above in response to the Krishnakumar reference.

As every claim requires “a flex panel having a flexure region ...and a flexure

initiator region”, wherein the flexure initiator region “causes said flexure region to progressively flex” (claims 27, 77) or to “reverse” (claim 37), the Weckman reference fails to anticipate any of the cited claims. For these reasons, and those presented above, these claims are allowable.

The Applicant believes that it has presented the Office with specific language in each of these references that refutes the Office’s assumptions and conclusions. If the Office disagrees, the Applicant respectfully requests the Office to support its conclusions with specific language from the references to allow the Applicant an opportunity to address the specific concerns of the Office.

Further, in response to at least a portion of the Response to Arguments, the Applicant disagrees with the stated conclusion that the “the length of arc is an ‘amount’ of arc”. The Applicant contends that the comment is inaccurate.

The length of arc is a distance measurement, such as centimeters (cm) or inches (in). The measurement of the length of arc is the following:

$$\text{Length of arc} = (\text{Arc Degrees}/360^\circ) \times (2\pi r)$$

If the radius  $r$  of the circle is measured in centimeters, the length of arc will be in centimeters. The amount of arc however, is measured in radians. A minute of arc, MOA, is a unit of angular measurement that is equal to one sixtieth ( $1/60$ ) of a degree. One degree is defined as one three hundred and sixtieth ( $1/360$ ) of a circle. Therefore one MOA is  $(1/60) * (1/360) = 1/21600$  of the amount of arc in a closed circle. Thus, the amount of arc does not equal the length of arc, the conclusion of which is reinforced and supported by the fact that the units for each measurement are different, namely, distance and angular measurement.

The assumption made by the Office regarding the equivalence of the amount of arc and length of arc has resulted in inappropriate conclusions regarding the claim language in light of the references. The Applicant respectfully argues that the citation Krishnakumar may disclose a variation in the amount of outward projection of the convex portion of the panel, and may also disclose a variation in the length of arc of the convex



portion of the panel. The Applicant argues, however, that this does not militate a change in the amount of arc of the convex portion of the panel.

The claims of the present invention rely in the first instance on a variation in the amount of arc within the convex portion of the panel. The Krishnakumar reference does not teach nor suggest this limitation.

As stated above, the Applicant argues that the amount of arc does not equate to the length of arc, and this is further discussed below.

The Applicant argues that the amount of arc is not necessarily dominated by the length of arc of curvature, nor by the amount of projection from the plane of the panel. These elements may indeed have an effect on the amount of arc, but do not *necessarily* result in a change to the radius of curvature of an arc. In the previous submission responding to Krishnakumar, the example was given as to how the radius of curvature could remain constant, despite a varying amount of projection from the plane of the panel, and despite having a varying length of arc. While the Office argues it is improper to suggest the reference teaches this point, the Applicant respectfully submits that the illustration was used to show the radius of curvature could in fact be constant in the reference. The reference itself teaches nothing beyond a stated single convexity, and therefore does not teach a varying radius of curvature in the convex portion of the panel.

In contrast to this, the present invention discloses at least 2 regions *within* an outwardly curved region, wherein these 2 regions have *different* amounts or magnitudes of curvature. Further, these 2 regions are longitudinally displaced from each other such that the region having a lesser amount of outward arc provides an initiator region, and the region having a greater amount of outward arc provides the flexure region. The Applicant also notes that the language “amount of arc or projection” on page 14 of the specification is not a reference to equivalents, but rather, is referencing separately stated properties, such as the height or length. In the particular embodiment disclosed in Figures 1-5 of the present invention, the projection happens to be less when the amount of arc is less, and both these properties are being referenced.

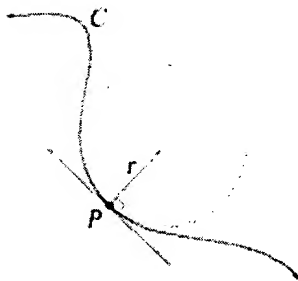
As discussed above, regarding Weckman, the Office argues that an initiator region is located at the top of the panel near lead line 92, and the flexure region is located

towards the bottom of the panel. In addition to the comments offered above, the Applicant respectfully disagrees that there are different curvatures displaced from each other. The panel is a label panel and therefore contains only one amount of arc or radius of curvature.

The Office equates length of arc to amount of arc. The Applicant disagrees with this conclusion. It is widely accepted that the amount, or magnitude, of arc is inextricably linked only to the radius of curvature, and not to arc length. Should the *radius of curvature* be different between 2 regions, then the *amount of arc* will be different.

One generally accepted definition of curvature assessment is now provided:

## Curvature of plane curves



For a plane curve  $C$ , the curvature at a given point  $P$  has a magnitude equal to the *reciprocal* of the radius of an osculating circle (a circle that "kisses" or closely touches the curve at the given point), and is a vector pointing in the direction of that circle's center. The magnitude of curvature at points on physical curves can be measured in diopeters (also spelled diopetre); a diopter has the dimension one per meter.

The smaller the radius  $r$  of the osculating circle, the larger the magnitude of the curvature ( $1/r$ ) will be; so that where a curve is "nearly straight", the curvature will be close to zero, and where the curve undergoes a tight turn, the curvature will be large in magnitude.

A straight line has curvature 0 everywhere; a circle of radius  $r$  has curvature  $1/r$  everywhere.

The Applicant respectfully repeats previous submissions arguing that the panel of Weckman contains only a single radius of curvature in order to allow application of a

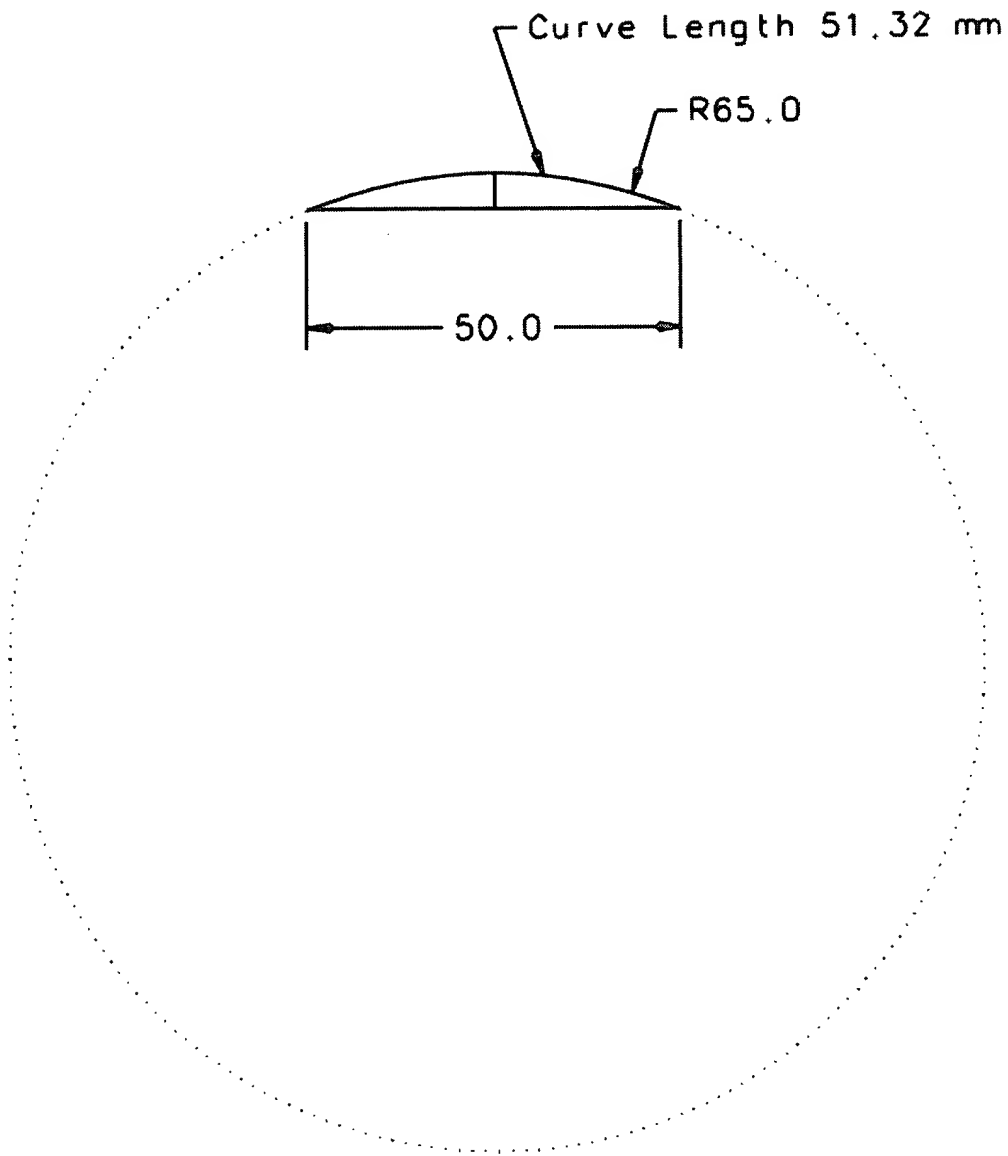
label. Weckman refers to this in the specification. Refer to Col 5, lines 35 – 55 *“The label panels 84 and 86 are both transversely convex. The vertical portions of the label panels 84 and 86 are composed of a continuous series of straight lines which are angled inwardly from the bottom of the container toward the top, such that the entire label panel is transversely convexed and tilts inwardly of the container from bottom to top. This compound geometry of transverse convex curvature and vertical uncurved design is necessitated by the fact that the central portions of the label panels 84 and 86 bear product identifying labels of the container 70. The vertical dimension of the label panels 84 and 86 cannot be curved, since a compound curve may not be fitted with a two dimensional label. A label on a compound curve surface will crease or spontaneously detach after adhesion to the container label surface. Such creasing or detachment is aesthetically unfavorable and is avoided by transverse convex curvature of the label panels 84 and 86 while maintaining a vertically straight geometry.”*

The Office correctly indicates that the arc of the panel near lead line 92 has an arc length that is shorter than the arc of the panel towards the bottom. However, it is incorrect to suggest that an initiator region is therefore provided near lead line 92 because there is a less amount of arc in that region. There is the *same* amount of arc in the region of the lead line 92, and so it does not constitute an initiator region. This conclusion further supports the arguments set forth above regarding the disclosure of Weckman; namely, that it fails to even suggest that the label panel contains an initiator portion.

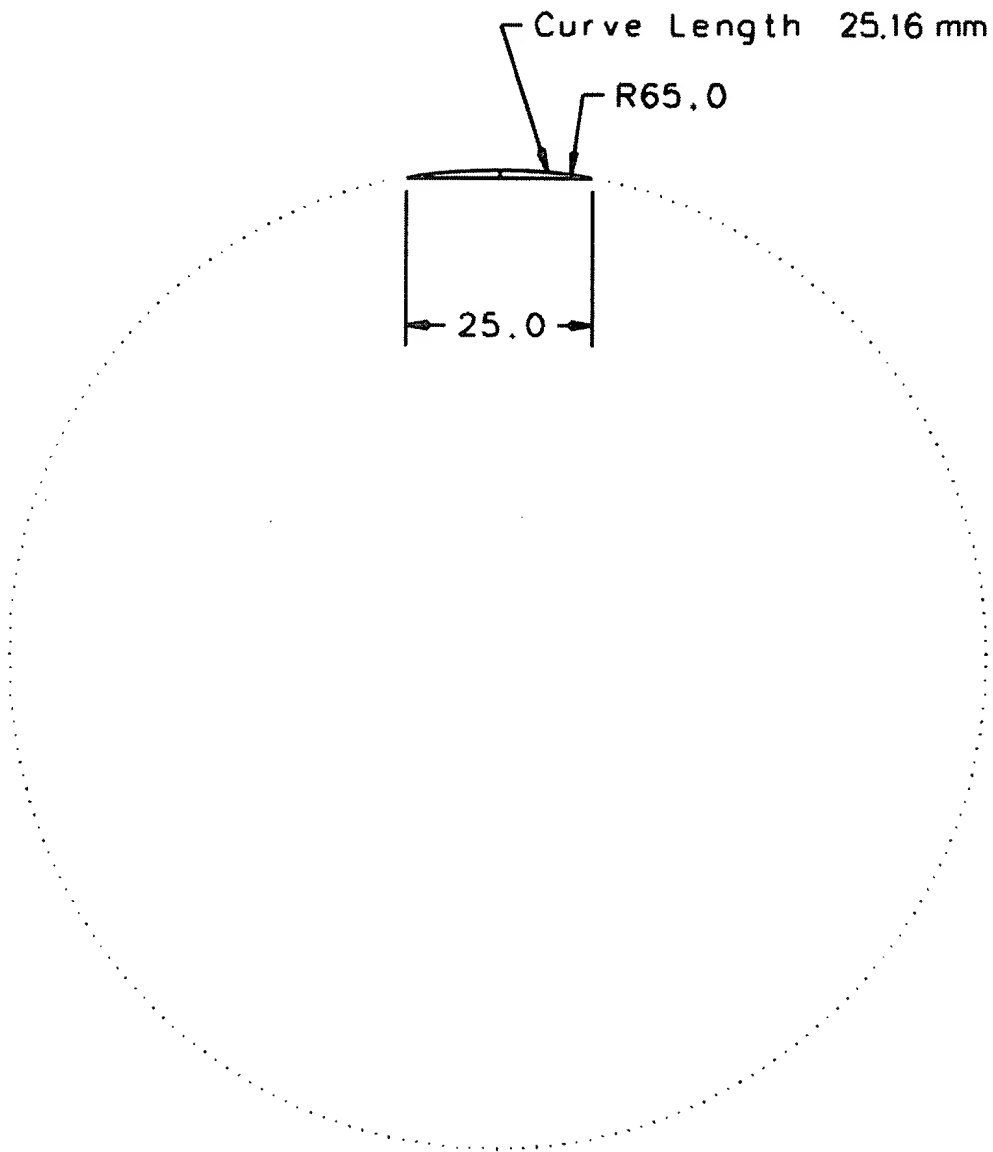
As illustrated below in Figures 1 and 2, it is possible for an arc to have a curve length that is shorter yet not have a lesser amount of arc. One example now given shows an arc having a length of 51.32mm (Figure 1) yet having an amount or magnitude of arc (radius of curvature R65) that is equal to an arc having a lesser curve length of 25.16 (Figure 2).

Thus, an arc may have a *lesser* amount of arc length but have an amount of arc equal to an arc possessing a *greater* arc length. Many examples can be provided, and for example, arcs can be generated that have lesser arc lengths but having a greater amount of arc (smaller radius of curvature).

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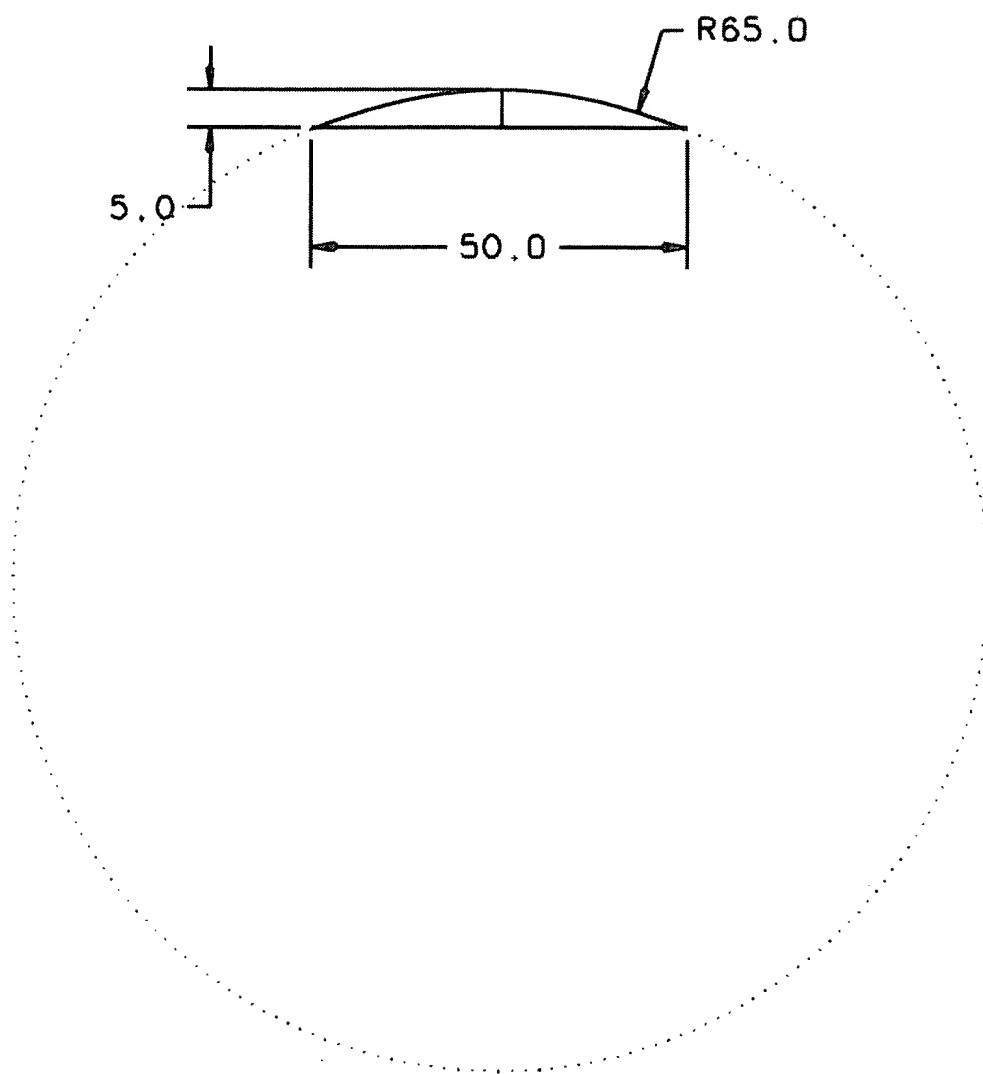


**FIGURE 1**

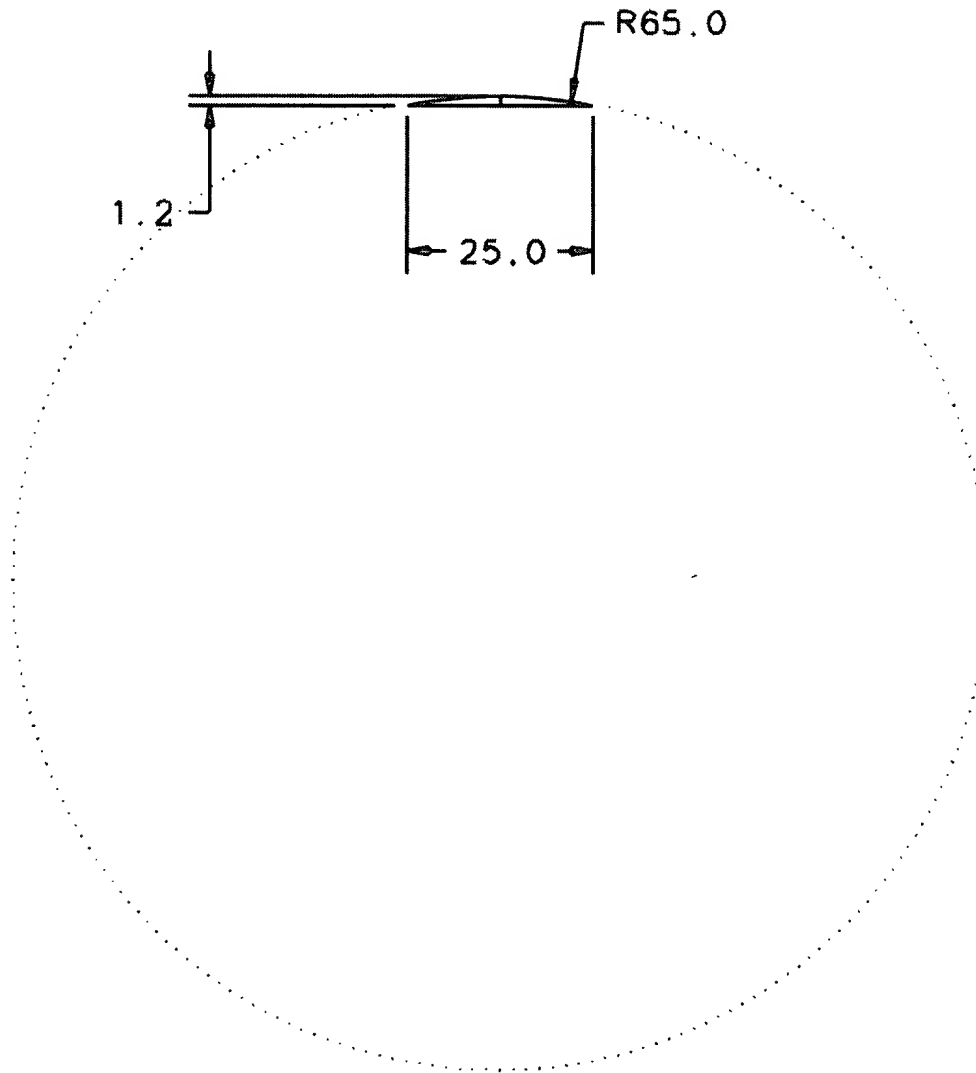


**FIGURE 2**

Applicant further argues that it is possible for an arc to have a greater outward projection and not have a greater amount of arc. In Figure 3 below, an arc projects 5mm out from a plane, yet has the same radius as the arc only projecting 1.2mm out from a plane in Figure 4.



**FIGURE 3**



**FIGURE 4**

The Applicant further submits that Weckman in fact supports the Applicant's submissions and teaches that the length of arc for a curve does not militate a change in amount of arc. As identified by the Office, Weckman illustrates that the region near the lead line 92 has a shorter length of arc. Weckman, however, teaches in the specification that this region has the same amount of arc as the remainder of the panel section, in order to provide even label adherence.

The Applicant further submits that Weckman also teaches that the amount of outward projection does not militate a change in amount of arc. Weckman illustrates that

the region near lead line 92 projects a lesser distance from the centerline of the container than the remainder of the panel section, yet teaches in the specification as already stated that there is no change to the amount of arc in this region.

The claims of the present invention cannot read on the reference constructions. The Applicant submits for example, that the region in Weckman near lead line 92 may not be considered an initiator region as there is evidence that it possesses the same amount of arc as the rest of the panel.

The Applicant acknowledges that in Figures 1-5 of the present invention, the amount of arc is disclosed as being lesser or greater, and that in this particular embodiment the length of arc appears lesser when the amount of arc is less, and the projection appears lesser when the amount of arc is less. However, as already discussed, the claims of the present invention rely on the amount of arc, and neither the length of arc nor amount of projection illustrated in the citations should confer anything in regard to the present invention. The references do not teach a variable amount of arc within a panel, and in fact teach away from this.

In light of the above, the language in the rejected claims is not met by the references as neither Krishnakumar nor Weckman teach or disclose varying amounts of arc as required by the claim language.

The Applicant acknowledges the telephone conference between the Examiner and the undersigned and thanks the Examiner for the same. That conversation included a suggestion by the Examiner to include claims directed to the orientation of the panel with respect to the neck of the bottle, and further claims directed to a panel wherein the top of the panel extends outwardly more than the bottom of the panel. The Applicant has submitted new claim 86 in response.

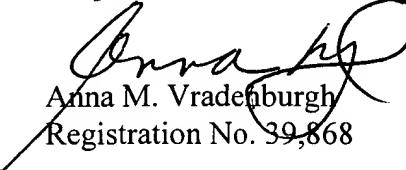
Claims 83-86 have been added. No new matter has been added.



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The Applicant contends that the claims are in allowable form and respectfully requests that the rejections be withdrawn and the claims passed onto allowance.

Respectfully submitted,

  
Anna M. Vradenburgh  
Registration No. 39,868

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Koppel, Jacobs, Patrick, & Heybl  
Suite 107  
555 St. Charles Drive  
Thousand Oaks, California 91360  
Telephone: (805)373-0060  
Facsimile: (805)373-0051